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Author

Corporate Author Plant Sciences Laboratories, Plant Physiology Division

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PLANT SCIENCES LABORATORIES
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Vegetation Control Investigations, Chemical

1. R&D Requirements

Following are goals for defoliation/herbicide R&D as suggested in June 1969 by COL H. C. Kinne, Chemical Operations Division, MACV J-3 based on the current situation in RVN:

a. True Defoliant - Killing trees to achieve defoliation may be undesirable because of the peacetime lumber potential, increase in bamboo and grasses following tree death and forest fire hazard.

b. More effective herbicide for ground spray, especially for large tropical grasses such as elephant grass.

c. Faster acting defoliant or technique for priority photo or visual reconnaissance.

d. Herbicide to permit effective flame burning of grasses in standing water or flooded areas.

e. Herbicide effective at significantly lower rates of application.

f. Herbicide providing increased duration of effect for border stripping without any soil sterilization aspect.

g. Growth retardant for grasses that can be used on perimeters, minefields, etc., without violation of prohibition on soil sterilants.

h. Nonvolatile defoliant for contact use in densely populated areas.

i. Waterhose disseminator for ground spray application.

2. Scope and Proposed R&D in Plant Sciences Laboratories' Program

a. Vegetation Control Technology

(1) Selection and Development of Agents - Screening and evaluation of chemicals as defoliants, herbicides, growth retardants and soil-applied chemicals.

(2) Mechanism of Action of Defoliants & Herbicides - Basic studies leading to optimized use.

(3) Basic Research in Leaf Abscission - Knowledge of the natural defoliation process needed to improve defoliant agents.

(4) Additional proposed R&D:

(a) Biological Defoliant - Fungal virus and bacterial extracts.

(b) Rapid Nonpersistent Defoliant

(c) Plant Growth Retardants

(d) Formulation and Agent Improvement

b. Effectiveness, Employment and Dissemination Studies

(1) Defoliation Agents - Field testing in UH-1B/D helicopter spray system.

(2) Agents for Control of Economic Vegetation - Field tests of herbicides and desiccants.

(3) Growth Retardant and Total Vegetation Control Agents - Field tests of foliar- and soil-applied herbicides.

(4) Additional proposed R&D:

(a) Drift Reduction - Use of invert emulsions and particulated agents.

c. Ecological Aspects of Vegetation Control

(1) Ecological Surveys of Defoliated Areas - Changes in vegetation composition and site conditions following defoliation; post-hostilities survey in RVN.

(2) Additional proposed R&D:

(a) Ecology and Control of Bamboo

(b) Cut Foliage Preservation Methods